COMPLETE LISTING OF CLAIMS

IN ASCENDING ORDER WITH STATUS INDICATOR

Claim 1 (currently amended): In a system comprising a network and at least one mobile station (MS) for enabling communications with the at least one MS, the system capable of performing a rescue procedure for rescuing a MS ~~having a connection with the network that has become a potentially failing connection~~for which an acknowledgement failure has been detected, a method for adjusting pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R used by the MS ~~having the potentially failing connection~~ in determining an updated active set of pilots for use by the MS in the rescue procedure, the method comprising:

incrementally lowering T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td.

Claim 2 (original): The method as recited in claim 1, further including lowering T_ADD_R and T_DROP_R in accordance with pilot signal strengths (Ec/Io values) measured at the MS.

Claim 3 (original): The method as recited in claim 1, further including lowering T_ADD_R and T_DROP_R by not more than a total amount MAX_dec_thres during the rescue procedure.

Claim 4 (original): The method as recited in claim 1, further including incrementally adjusting Td between time instants T_N.

Claim 5 (original): The method as recited in claim 2, further including increasing Td between one or more time instants T_N if a combined pilot Ec/Io for the updated active set of the MS is higher than a predetermined desired combined pilot Ec/Io.

Claim 6 (currently amended): ~~The method as recited in claim 2, further including:~~In a system comprising a network and at least one mobile station (MS) for enabling communications with the at least one MS, the system capable of performing a rescue procedure for rescuing a MS for which an acknowledgement failure has been detected, a method for adjusting pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R used by the MS in determining an updated active set of pilots for use by the MS in the rescue procedure, the method comprising:

incrementally lowering T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td;

lowering T_ADD_R and T_DROP_R in accordance with pilot signal strengths (Ec/Io values) measured at the MS;

increasing Td between one or more time instants T_N if a difference between a combined pilot Ec/Io for the updated active set of the MS and the combined pilot Ec/Io for a previous updated active set of the MS is larger than a predetermined threshold; and

decreasing Td between one or more time instants T_N if the difference between the E for the updated active set of the MS and the E for a previous updated active set of the MS is smaller than the predetermined threshold.

Claim 7 (original): The method as recited in claim 1, further including incrementally adjusting STEP_dec_thres at one or more time instants T_N.

Claim 8 (currently amended): ~~The method as recited in claim 7, further including~~ In a system comprising a network and at least one mobile station (MS) for enabling communications with the at least one MS, the system capable of performing a rescue procedure for rescuing a MS for which an acknowledgement failure has been detected, a method for adjusting pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R used by the MS in determining an updated active set of pilots for use by the MS in the rescue procedure, the method comprising:

incrementally lowering T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td;

incrementally adjusting STEP_dec_thres at one or more time instants T_N; and

adjusting STEP_dec_thres at each time instant T_N~~, the step of adjusting STEP_dec_thres at each time instant T_N comprising:~~ by

determining a number of complete rescue cycles K that could be completed before a rescue procedure timer reaches its terminal count[;], and

computing (T_ADD_H – MAX_dec_thres)/(K-1) as a value for STEP_dec_thres at each time instant T_N, wherein T_ADD_H is an initial value for T_ADD_R at the start of the rescue procedure.

Claim 9 (currently amended): ~~The method as recited in claim 7, further including~~ In a system comprising a network and at least one mobile station (MS) for enabling communications with the at least one MS, the system capable of performing a rescue procedure for rescuing a MS for which an acknowledgement failure has been detected, a method for adjusting pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R used by the MS in determining an updated active set of pilots for use by the MS in the rescue procedure, the method comprising:

incrementally lowering T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td;

incrementally adjusting STEP_dec_thres at one or more time instants T_N; and

increasing STEP_dec_thres at each time instant T_N~~, the step of increasing STEP_dec_thres at each time instant T_N comprising:~~ by

determining a number of complete rescue cycles K that could be completed before a rescue procedure timer reaches its terminal count[;],

determining $\delta = 2*(MAX\_dec\_thres)/(K-1)K$, where δ is an initial value for STEP_dec_thres at the start of the rescue procedure[;], and

computing $\delta*N$ as a value for STEP_dec_thres at each time instant T_N, wherein N = 1,2,...(K-1).

Claim 10 (currently amended): ~~The method as recited in claim 7, further including:~~In a system comprising a network and at least one mobile station (MS) for enabling communications with the at least one MS, the system capable of performing a rescue procedure for rescuing a MS for which an acknowledgement failure has been detected, a method for adjusting pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R used by the MS in determining an updated active set of pilots for use by the MS in the rescue procedure, the method comprising:

incrementally lowering T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td;

incrementally adjusting STEP_dec_thres at one or more time instants T_N;

decreasing STEP_dec_thres at one or more time instants T_N, N = 1,2,...M, if a difference between a combined pilot Ec/Io for the updated active set of the MS at a particular time instant T_N and the combined pilot Ec/Io for a previous updated active set of the MS at an immediately previous time instant T_{N-1} is larger than a predetermined threshold; and

increasing STEP_dec_thres at one or more time instants T_N, N = 1,2,...M, if the difference between the combined pilot Ec/Io for the updated active set of the MS at the particular time instant T_N and the combined pilot Ec/Io for the previous updated active set of the MS at the immediately previous time instant T_{N-1} is smaller than or equal to a predetermined threshold.

Claim 11 (currently amended): ~~The method as recited in claim 2, further including~~ In a system comprising a network and at least one mobile station (MS) for enabling communications with the at least one MS, the system capable of performing a rescue procedure for rescuing a MS for which an acknowledgement failure has been detected, a method for adjusting pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R used by the MS in determining an updated active set of pilots for use by the MS in the rescue procedure, the method comprising:

incrementally lowering T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td;

lowering T_ADD_R and T_DROP_R in accordance with pilot signal strengths (Ec/Io values) measured at the MS; and

determining MAX_dec_thres~~, the determination of MAX_dec_thres comprising:~~ by

selecting a desired combined pilot Ec/Io that gives a high probability of producing a good link as $(Ec/Io)_{desired}$[;],

measuring or estimating an Ec/Io value from a strongest pilot in the updated active set as $(Ec/Io)_{max}$~~; and~~,

solving $(Ec/Io)_{max} + (N-1)\ (Ec/Io)_{min} \geq (Ec/Io)_{desired}$ for $(Ec/Io)_{min}$, where N is a maximum allowed active set size[;], and

computing MAX_dec_thres as T_ADD_R - $(Ec/Io)_{min}$.

Claim12 (currently amended): ~~The method as recited in claim 2, further including:~~In a system comprising a network and at least one mobile station (MS) for enabling communications with the at least one MS, the system capable of performing a rescue procedure for rescuing a MS for which an acknowledgement failure has been detected, a method for adjusting pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R used by the MS in determining an updated active set of pilots for use by the MS in the rescue procedure, the method comprising:

incrementally lowering T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td;

lowering T_ADD_R and T_DROP_R in accordance with pilot signal strengths (Ec/Io values) measured at the MS;

measuring Ec/Io for all pilots detectable by the MS having the potentially failing connection;

placing the measured pilots in a list in order of decreasing Ec/Io; and

starting with the pilot in the list having the highest Ec/Io and going through the list in order of decreasing Ec/Io,

measuring the combined Ec/Io for all pilots in the updated active set,

for a current pilot from the list, determining the combined Ec/Io for all pilots in the updated active set plus the current pilot, and

adding the current pilot to the updated active set if the current pilot increased the combined Ec/Io measurement by a predetermined percentage.

Claim 13 (currently amended): The method as recited in claim 1, the method for additionally determining an updated active set of pilots for use by the network in the rescue procedure, the method further comprising:

transmitting a uniform energy signal from the MS having the potentially failing connection; and

for each of one or more BSs in a neighborhood of the MS ~~having the potentially failing connection~~, measuring a strength of the uniform energy signal, and adding the BS to the updated active set used by the network if the strength of the uniform energy signal for that BS is above a predetermined threshold.

Claim 14 (currently amended): ~~The method as recited in claim 13,~~ In a system comprising a network and at least one mobile station (MS) for enabling communications with the at least one MS, the system capable of performing a rescue procedure for rescuing a MS for which an acknowledgement failure has been detected, a method for adjusting pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R used by the MS in determining an updated active set of pilots for use by the MS in the rescue procedure, the method comprising:

incrementally lowering T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td; and

determining an updated active set of pilots for use by the network in the rescue procedure by

transmitting a uniform energy signal from the MS having the potentially failing connection, and

for each of one or more BSs in a neighborhood of the MS, measuring a strength of the uniform energy signal, and adding the BS to the updated active set used by the network if the strength of the uniform energy signal for that BS is above a predetermined threshold;

wherein the uniform energy signal is a reverse link pilot signal.

Claim 15 (currently amended): ~~The method as recited in claim 13,~~ In a system comprising a network and at least one mobile station (MS) for enabling communications with the at least one MS, the system capable of performing a rescue procedure for rescuing a MS for which an acknowledgement failure has been detected, a method for adjusting pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R used by the MS in determining an updated active set of pilots for use by the MS in the rescue procedure, the method comprising:

incrementally lowering T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td; and

determining an updated active set of pilots for use by the network in the rescue procedure by

transmitting a uniform energy signal from the MS, and

for each of one or more BSs in a neighborhood of the MS, measuring a strength of the uniform energy signal, and adding the BS to the updated active set used by the network if the strength of the uniform energy signal for that BS is above a predetermined threshold;

wherein the uniform energy signal is a data signal at a predetermined data rate with predetermined data.

Claim 16 (currently amended): The method as recited in claim 1, the method for additionally determining an updated active set of pilots for use by the network in the rescue procedure, the method further comprising:

for each of one or more BSs in a neighborhood of the MS ~~having the potentially failing connection~~, adding the BS to the updated active set used by the network in accordance with a location of the MS and network planning information.

Claim 17 (currently amended): The method as recited in claim 1, the MS ~~having the potentially failing connection~~ capable of transmitting a uniform energy signal, the method for additionally determining an updated active set of pilots for use by the network in the rescue procedure, the method further comprising:

for each of one or more BSs in a neighborhood of the MS ~~having the potentially failing connection~~, measuring a strength of the uniform energy signal, and adding the BS to the updated active set used by the network if the strength of the uniform energy signal for that BS is above a predetermined threshold.

Claim 18 (original): The method as recited in claim 17, wherein the uniform energy signal is a reverse link pilot signal.

Claim 19 (original): The method as recited in claim 17, wherein the uniform energy signal is a data signal at a predetermined data rate with predetermined data.

Claim 20 (currently amended): A mobile station (MS) for communicating with a network and for assisting in performing a rescue procedure when ~~the MS has a connection with the network that has become a potentially failing connection~~an acknowledgement failure has been detected, the MS comprising:

a processor programmed for incrementally lowering pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td;

wherein T_ADD_R and T_DROP_R are used by the MS for determining an updated active set of pilots for use in the rescue procedure.

Claim 21 (original): The MS as recited in claim 20, the processor further programmed for lowering T_ADD_R and T_DROP_R in accordance with pilot signal strengths (Ec/Io values) measured at the MS.

Claim 22 (original): The MS as recited in claim 20, the processor further programmed for lowering T_ADD_R and T_DROP_R by not more than an total amount MAX_dec_thres during the rescue procedure.

Claim 23 (original): The MS as recited in claim 20, the processor further programmed for incrementally adjusting Td between time instants T_N.

Claim 24 (original): The MS as recited in claim 21, the processor further programmed for increasing Td between one or more time instants T_N if a combined pilot Ec/Io for the updated active set of the MS is higher than a predetermined desired combined pilot Ec/Io.

Claim 25 (currently amended): ~~The MS as recited in claim 21, the processor further programmed for:~~A mobile station (MS) for communicating with a network and for assisting in performing a rescue procedure when an acknowledgement failure has been detected, the MS comprising:

a processor programmed for

incrementally lowering pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td,

lowering T_ADD_R and T_DROP_R in accordance with pilot signal strengths (Ec/Io values) measured at the MS,

increasing Td between one or more time instants T_N if a difference between a combined pilot Ec/Io for the updated active set of the MS and the combined pilot Ec/Io for a previous updated active set of the MS is larger than a predetermined threshold[;], and

decreasing Td between one or more time instants T_N if the difference between the E for the updated active set of the MS and the E for a previous updated active set of the MS is smaller than the predetermined threshold;

wherein T_ADD_R and T_DROP_R are used by the MS for determining an updated active set of pilots for use in the rescue procedure.

Claim 26 (original): The MS as recited in claim 20, the processor further programmed for incrementally adjusting STEP_dec_thres at one or more time instants T_N.

Claim 27 (currently amended): ~~The MS as recited in claim 26,~~ A mobile station (MS) for communicating with a network and for assisting in performing a rescue procedure when an acknowledgement failure has been detected, the MS comprising:

a processor programmed for

incrementally lowering pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td;

incrementally adjusting STEP_dec_thres at one or more time instants T_N, and

~~the processor further programmed for~~ adjusting STEP_dec_thres at each time instant T_N by[:]

determining a number of complete rescue cycles K that could be completed before a rescue procedure timer reaches its terminal count[;], and

computing (T_ADD_H – MAX_dec_thres)/(K-1) as a value for STEP_dec_thres at each time instant T_N, wherein T_ADD_H is an initial value for T_ADD_R at the start of the rescue procedure;

wherein T_ADD_R and T_DROP_R are used by the MS for determining an updated active set of pilots for use in the rescue procedure.

Claim 28 (currently amended): ~~The MS as recited in claim 26,~~ A mobile station (MS) for communicating with a network and for assisting in performing a rescue procedure when an acknowledgement failure has been detected, the MS comprising:

a processor programmed for

incrementally lowering pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td,

incrementally adjusting STEP_dec_thres at one or more time instants T_N, and

~~the processor further programmed for~~ increasing STEP_dec_thres at each time instant T_N by[:]

determining a number of complete rescue cycles K that could be completed before a rescue procedure timer reaches its terminal count[;],

determining $\delta = 2*(MAX\_dec\_thres)/(K-1)K$, where δ is an initial value for STEP_dec_thres at the start of the rescue procedure[;], and

computing $\delta*N$ as a value for STEP_dec_thres at each time instant T_N, wherein N = 1,2,...(K-1);

wherein T_ADD_R and T_DROP_R are used by the MS for determining an updated active set of pilots for use in the rescue procedure.

Claim 29 (currently amended): ~~The MS as recited in claim 26, the processor further programmed for:~~A mobile station (MS) for communicating with a network and for assisting in performing a rescue procedure when an acknowledgement failure has been detected, the MS comprising:

a processor programmed for

incrementally lowering pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td,

incrementally adjusting STEP_dec_thres at one or more time instants T_N,

decreasing STEP_dec_thres at one or more time instants T_N, N = 1,2,...M, if a difference between a combined pilot Ec/Io for the updated active set of the MS at a particular time instant T_N and the combined pilot Ec/Io for a previous updated active set of the MS at an immediately previous time instant T_{N-1} is larger than a predetermined threshold[;], and

increasing STEP_dec_thres at one or more time instants T_N, N = 1,2,...M, if the difference between the combined pilot Ec/Io for the updated active set of the MS at the particular time instant T_N and the combined pilot Ec/Io for the previous updated active set of the MS at the immediately previous time instant T_{N-1} is smaller than or equal to a predetermined threshold;

wherein T_ADD_R and T_DROP_R are used by the MS for determining an updated active set of pilots for use in the rescue procedure.

Claim 30 (currently amended): ~~The MS as recited in claim 21, the processor further programmed for~~ A mobile station (MS) for communicating with a network and for assisting in performing a rescue procedure when an acknowledgement failure has been detected, the MS comprising:

a processor programmed for

incrementally lowering pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td,

lowering T_ADD_R and T_DROP_R in accordance with pilot signal strengths (Ec/Io values) measured at the MS, and

determining MAX_dec_thres by[:]

selecting a desired combined pilot Ec/Io that gives a high probability of producing a good link as $(Ec/Io)_{desired}$[;],

measuring or estimating an Ec/Io value from a strongest pilot in the updated active set as $(Ec/Io)_{max}$; ~~and~~,

solving $(Ec/Io)_{max} + (N-1)\ (Ec/Io)_{min} \geq (Ec/Io)_{desired}$ for $(Ec/Io)_{min}$, where N is a maximum allowed active set size[;], and

computing MAX_dec_thres as T_ADD_R - $(Ec/Io)_{min}$;

wherein T_ADD_R and T_DROP_R are used by the MS for determining an updated active set of pilots for use in the rescue procedure.

Claim 31 (currently amended): ~~The MS as recited in claim 21, the processor further programmed for:~~A mobile station (MS) for communicating with a network and for assisting in performing a rescue procedure when an acknowledgement failure has been detected, the MS comprising:

a processor programmed for

incrementally lowering pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td,

lowering T_ADD_R and T_DROP_R in accordance with pilot signal strengths (Ec/Io values) measured at the MS,

measuring Ec/Io for all pilots detectable by the MS having the potentially failing connection[;],

placing the measured pilots in a list in order of decreasing Ec/Io[;], and

starting with the pilot in the list having the highest Ec/Io and going through the list in order of decreasing Ec/Io,

measuring the combined Ec/Io for all pilots in the updated active set,

for a current pilot from the list, determining the combined Ec/Io for all pilots in the updated active set plus the current pilot, and

adding the current pilot to the updated active set if the current pilot increased the combined Ec/Io measurement by a predetermined percentage;

wherein T_ADD_R and T_DROP_R are used by the MS for determining an updated active set of pilots for use in the rescue procedure.

Claim 32 (currently amended): A communications system for determining an updated active set of pilots used in a rescue procedure for rescuing a mobile station (MS) having a connection with a network ~~that has become a potentially failing connection~~for which an acknowledgement failure has been detected, the system comprising:

a MS, the MS comprising a processor programmed for

incrementally lowering pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R by an amount STEP_dec_thres at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td, wherein T_ADD_R and T_DROP_R are used by the MS for determining the updated active set of MS pilots for use in the rescue procedure, and

transmitting a uniform energy signal during a time when the MS is having the ~~potentially failing connection~~acknowledgement failure; and

a network communicatively coupled to the MS, the network including one or more pilots in a neighborhood of the MS for communicating with the MS, each pilot including a processor programmed for receiving and measuring a strength of the uniform energy signal and adding the pilot to the updated active set used by the network in performing the rescue procedure if the strength of the uniform energy signal is above a predetermined threshold.

Claim 33 (original) The system as recited in claim 32, wherein the uniform energy signal transmitted by the MS is a reverse link pilot signal.

Claim 34 (original) The system as recited in claim 32, wherein the uniform energy signal transmitted by the MS is a data signal at a predetermined data rate with predetermined data.

Claim 35 (currently amended): The system as recited in claim 32, the method for additionally determining the updated active set of pilots for use by the network in the rescue procedure, the method further comprising:

for each of one or more BSs in the neighborhood of the MS ~~having the potentially failing connection~~, adding the BS to the updated active set used by the network in accordance with a location of the MS and network planning information.

Claim 36 (currently amended): A network for communicating with a mobile station (MS) and for assisting in performing a rescue procedure when the MS has a connection with the network ~~that has become a potentially failing connection~~for which an acknowledgement failure has been detected, the MS ~~having the potentially failing connection~~ capable of transmitting a uniform energy signal, the network comprising:

one or more BS sectors in a neighborhood of the MS for communicating with the MS, each BS sector including a processor programmed for receiving and measuring a strength of the uniform energy signal and adding the BS sector to an updated active set used by the network in performing the rescue procedure if the strength of the uniform energy signal is above a predetermined threshold.

Claim 37 (original): The network as recited in claim 36, wherein the uniform energy signal is a reverse link pilot signal.

Claim 38 (original): The network as recited in claim 36, wherein the uniform energy signal is a data signal at a predetermined data rate with predetermined data.

Claim 39 (currently amended): In a system comprising a network and at least one mobile station (MS) for enabling communications with the at least one MS, the system capable of performing a rescue procedure for rescuing a MS having a connection with the network ~~that has become a potentially failing connection~~for which an acknowledgement failure has been detected, a method for adjusting pilot signal strength add and drop thresholds T_ADD_R and T_DROP_R used by the MS ~~having the potentially failing connection~~ in determining an updated active set of pilots for use by the MS in the rescue procedure, the method comprising:

at one or more specific time instants t_N, N = 1,2,...M during the rescue procedure, each time instant separated by a time Td,

computing temporary rescue add and drop threshold values by lowering present values for T_ADD_R and T_DROP_R by an amount STEP_dec_thres; and

computing add and drop threshold algorithms specified in Sections 2.6.6.2.5.2 and 2.6.6.2.3 of the IS-2000-5 Standard, respectively, after replacing static add and drop threshold values in those algorithms with the temporary rescue add and drop threshold values, to generate new values for T_ADD_R and T_DROP_R, respectively.